

The specific gravity of the electrolyte in each battery cell is an excellent indication of that cell's condition. A fully charged cell will read 1.260-1.280, while a cell in acceptable condition reads from 1.230-1.250 and anything below 1.160 is discharged.

Specific gravity varies with temperature. For each 10° the electrolyte temperature exceeds 80° F (27° C), add 0.004 to readings indicated on the hydrometer. Subtract 0.004 for each 10° below 80° F (27° C).

If the cells test in the poor range, the battery requires recharging. The hydrometer is useful for checking the progress of the charging operation. **Table 3** shows approximate state of charge.

Charging

WARNING

During the charging process, highly explosive hydrogen gas is released from the battery. The battery should be charged only in a well-ventilated area and away from any open flames (including pilot lights on home gas appliances). Do not allow any smoking in the area. Never check the charge of the battery by arcing across the terminals; the resulting spark can ignite the hydrogen gas.

CAUTION

Always remove the battery from the vehicle before connecting the battery charger. Never recharge a battery in the ATC's frame due to the corrosive mist that is emitted during the charging process. If this mist settles on the frame it will damage it.

1. Connect the positive (+) charger lead to the positive (+) battery terminal (or lead) and the negative (-) charger lead to the negative (-) battery terminal (or lead).
2. Remove all vent caps from the battery, set the charger at 12 volts and switch the charger on. If the output of the charger is variable, it is best to select a low setting—1 1/2 to 2 amps.

CAUTION

The electrolyte level must be maintained at the upper level during the charging cycle; check and refill as necessary.

3. After the battery has been charged for about 8 hours, turn the charger off, disconnect the leads and check the specific gravity. It should be within the limits specified in **Table 3**. If it is, and remains stable for 1 hour, the battery is considered charged.

4. Clean the battery terminals, surrounding case and tray and reinstall them in the ATC, reversing the removal steps. Coat the battery terminals with Vaseline or silicone spray to retard corrosion and decomposition of the terminals.

CAUTION

Route the breather tube through the clips on the drive chain case so that it does not drain onto any part of the ATC's frame. The tube must be free of bends or twists as any restriction may pressurize the battery and damage it.

New Battery Installation

When replacing the old battery with a new one, be sure to charge it completely (specific gravity 1.260-1.280) before installing it in the ATC. Failure to do so, or using the battery with a low electrolyte level, will permanently damage the new battery.

PERIODIC LUBRICATION

Oil

Oil is graded according to its viscosity, which is an indication of how thick it is. The Society of Automotive Engineers (SAE) system distinguishes oil viscosity by numbers. Thick oils have higher viscosity numbers than thin oils. For example, an SAE 5 oil is a thin oil while an SAE 90 oil is relatively thick.

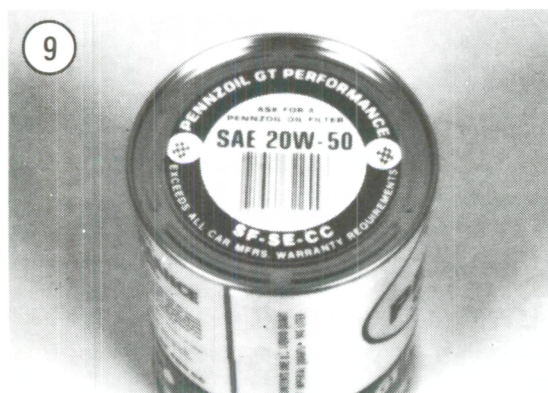
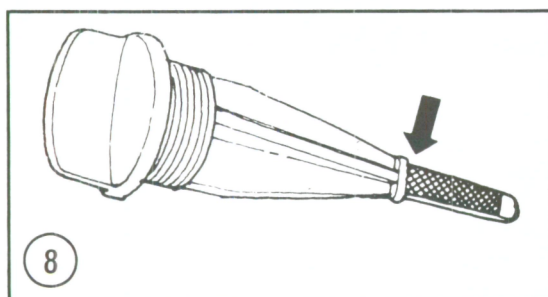
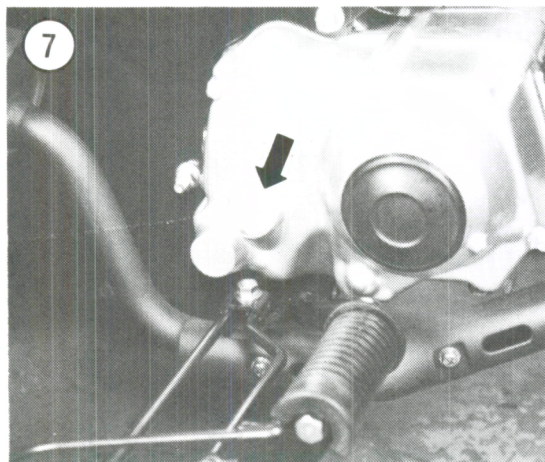
Grease

A good quality grease (preferably waterproof) should be used. Water does not wash grease off parts as easily as it washes off oil. In addition, grease maintains its lubricating qualities better than oil on long and strenuous rides. In a pinch, though, the wrong lubricant is better than none at all. Correct the situation as soon as possible.

Engine Oil Level Check

Engine oil level is checked with the dipstick/oil filler cap, located on the rear right-hand side of the engine behind the clutch mechanism cover (**Figure 7**).

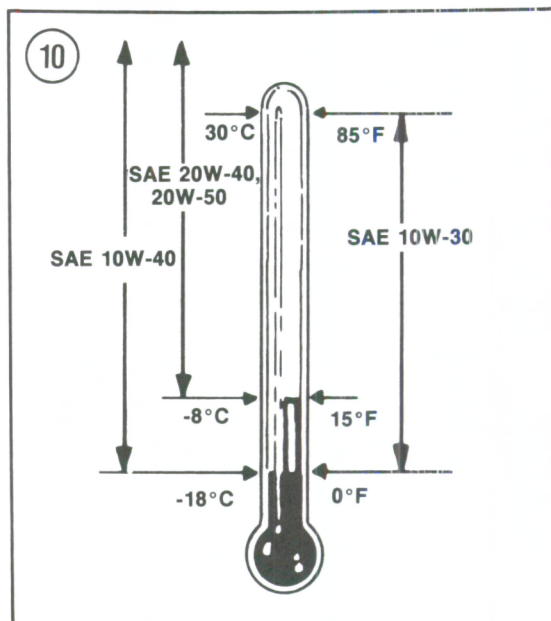
1. Start the engine and let it warm up approximately 2-3 minutes. Shut off the engine and let the oil settle.
2. Place the ATC on a level surface.
3. Unscrew the dipstick/oil filler cap and wipe it clean. Reinsert it onto the threads in the hole; do not screw it in. Remove it and check the oil level. The ATC must be level for a correct reading.



4. The level should be between the 2 lines, not above the upper one (**Figure 8**). If necessary, add the recommended type oil to correct the level. Install the dipstick/oil filler cap and tighten it securely.

Engine Oil Change

Regular oil changes will contribute more to engine longevity than any other maintenance operation performed. The factory-recommended oil change interval and the interval for cleaning the oil



filter screen and rotor are listed in **Table 1**. These intervals assume that the ATC is operated in moderate climates. If it is operated under dusty conditions, the oil will get dirty more quickly and should be changed more frequently than recommended.

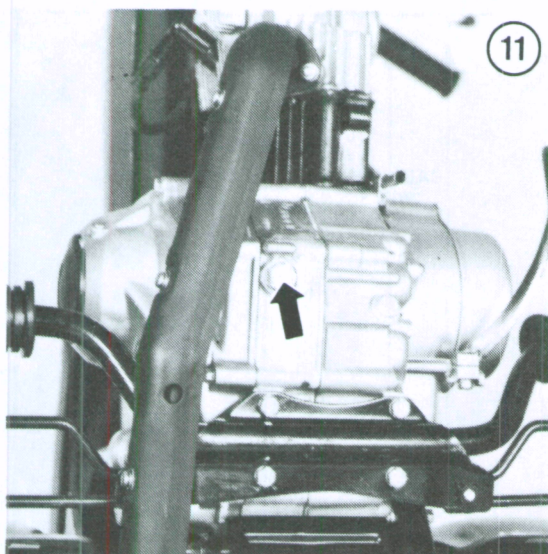
Use only a high quality detergent motor oil with an API classification of SE or SF. The classification is stamped or printed on top of the can (**Figure 9**). Try to use the same brand of oil at each oil change. Refer to **Figure 10** for correct oil viscosity to use under anticipated ambient temperatures (not engine oil temperature).

CAUTION

Do not add any friction reducing additives to the oil as they will cause clutch slippage. Also, do not use an engine oil with graphite added. The use of graphite oil will void any applicable Honda warranty. It is not established at this time if graphite will build up on the clutch friction plates and cause clutch problems. Until further testing is done by the oil and motorcycle industry, do not use this type of oil.

To change the engine oil and filter you will need the following:

- Drain pan.
- Funnel.
- Can opener or pour spout.
- 17 mm wrench (supplied in the owner's tool kit).
- Oil (see **Table 4** for capacity).



NOTE

Never dispose of motor oil in the trash or pour it on the ground, or down a storm drain. Many service stations accept used motor oil. Many waste haulers provide curbside used motor oil collection. Do not combine other fluids with motor oil to be recycled. To find a recycling location contact the American Petroleum Institute (API) at www.recycleoil.org.

1. Place the ATC on level ground and set the parking brake or block the wheels so the vehicle will not roll in either direction.
2. Start the engine and let it reach operating temperature.
3. Shut the engine off and place a drain pan under the engine drain plug.

NOTE

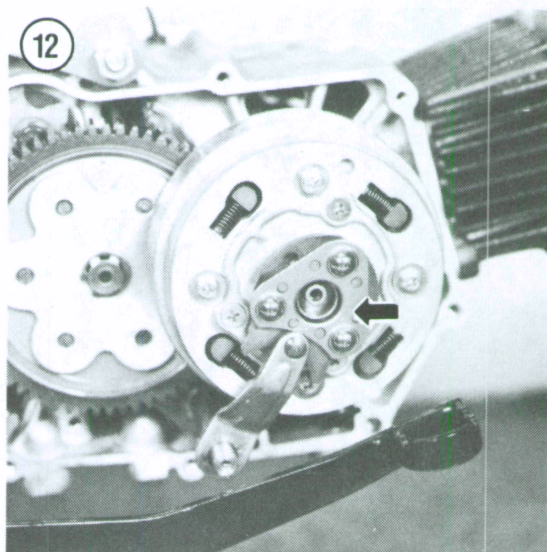
In the following step, use the 17 mm wrench provided in the owner's tool kit.

4. Remove the 17 mm drain plug (**Figure 11**). Remove the dipstick/oil filler cap; this will speed up the flow of oil.
5. Let it drain for at least 15-20 minutes. During this time, turn the engine over a couple of times with the recoil starter to drain any remaining oil.

CAUTION

Do not let the engine start and run without oil in the crankcase. Make sure the ignition switch is in the OFF position.

6. Inspect the sealing washer on the drain plug; replace if necessary.
7. Install and tighten the drain plug to 20-25 N•m (14-18 ft.-lb.).



8. Clean the oil filter screen and the oil filter rotor prior to refilling the crankcase with fresh oil. Both procedures are described in this chapter.
9. Insert a funnel into the oil fill hole and fill the engine with the correct viscosity and quantity of oil. Refer to **Table 4** for engine oil capacity for each model.
10. Screw in the dipstick/oil filler cap securely.
11. Start the engine, let it run at moderate speed and check for leaks.
12. Turn the engine off and check for correct oil level; adjust as necessary.

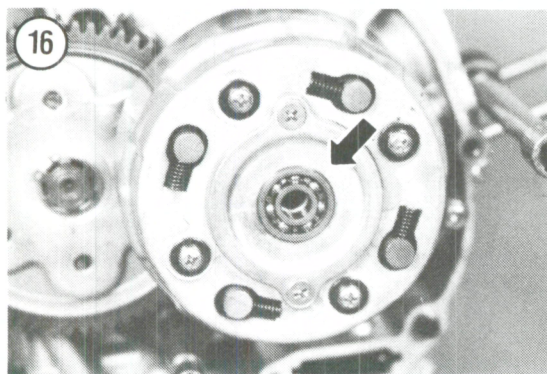
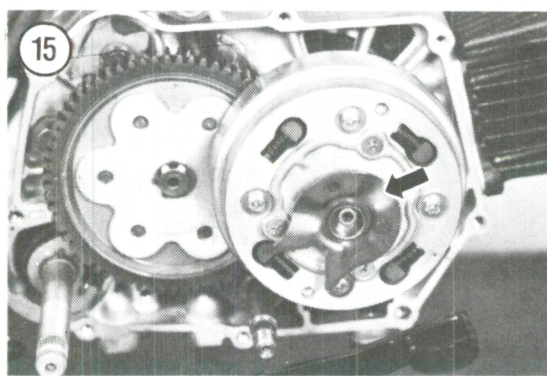
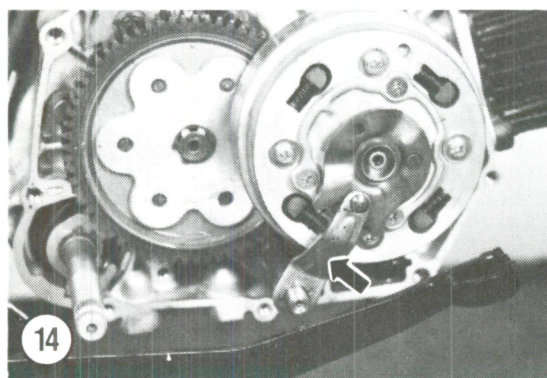
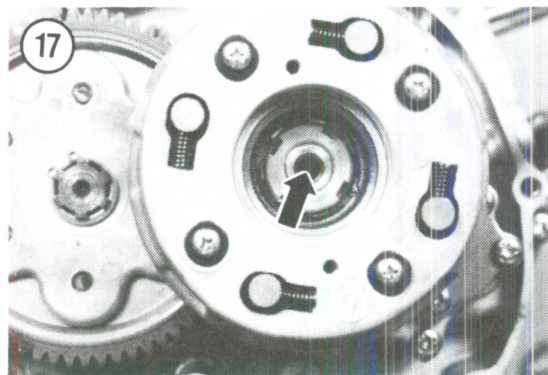
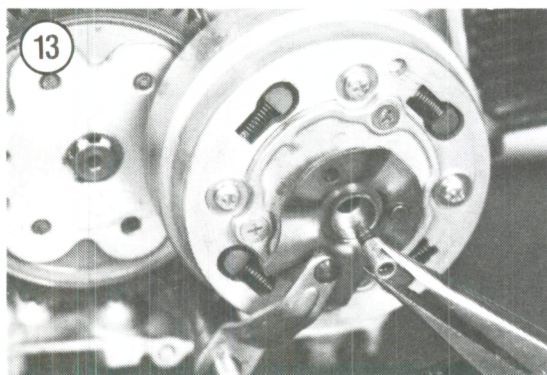
Centrifugal Oil Filter Rotor and Oil Filter Screen Cleaning

The centrifugal oil filter rotor and oil filter screen should be cleaned every time the engine oil is changed.

1. Drain the engine oil as described in this chapter.
2. Move an oil drain pan under the right-hand crankcase cover (residual oil will drain out when this cover is removed). Remove the bolts securing the right-hand crankcase cover and remove the cover and the gasket. Don't lose the locating dowels.
3. Remove the clutch ball retainer (**Figure 12**), the oil guide and spring (**Figure 13**), the clutch release lever (**Figure 14**) and the cam plate assembly (**Figure 15**).
4. Remove the screws securing the clutch outer housing cover (**Figure 16**) and remove the cover.
5. Thoroughly clean the clutch outer housing cover in solvent and dry with compressed air.

CAUTION

*Do not allow any dirt or sludge to enter the opening in the end of the crankshaft (**Figure 17**). This is the crankshaft oil passageway.*



6. Use a lint-free shop cloth moistened in solvent and clean the inside of the rotor (Figure 18). If necessary, scrape out any oil sludge with a broad-tipped dull screwdriver.

7. Install the clutch outer housing cover and install the screws. Tighten the screws securely.

8. Install the cam plate assembly, the clutch release lever, the oil guide and spring and the clutch ball retainer.

9. Pull the oil filter screen (Figure 19) out of the right-hand crankcase. Clean it with solvent and a medium soft toothbrush and carefully dry with compressed air.

NOTE

Figure 19 is shown with the engine removed and partially disassembled for clarity.

10. Inspect the screen; replace it if there are any breaks or holes in it. Install the screen.

11. Install the dowel pins and the gasket.

12. Install the right-hand crankcase cover. Push it all the way into place. Install the screws and tighten securely in a crisscross pattern.

CAUTION

Do not install any of the crankcase cover screws until the crankcase cover is snug up against the crankcase surface. Do not try to force the cover into place with screw pressure. If the cover will not fit up against the crankcase, remove the crankcase cover and repeat Step 12.

13. Refill the engine with the recommended type and quantity of oil; refer to *Engine Oil Change* in this chapter.

Drive Chain Lubrication (With O-rings)

The 1981-on ATC110 and the ATC125M models are equipped with an O-ring type drive chain. Special care must be taken when cleaning

and lubricating this type of chain. The chain should be removed and cleaned prior to lubricating it. Refer to *Drive Chain Cleaning and Lubrication* in Chapter Eight.

Drive Chain Lubrication (Without O-rings)

Lubricate the drive chain every 30 days of operation or more frequently if required. A properly maintained chain will provide maximum service life and reliability.

1. Remove the seat/rear fender assembly.

2A. On ATC70 models, remove the inspection cap (Figure 20) on the side of the drive chain case.

2B. On ATC90 and 1979-1980 ATC110 models, remove the rubber inspection cap at the rear of the drive chain case.

NOTE

One way to make sure that you lubricate the entire run of the chain is to mark one of the links with a light colored paint.

3. Shift the transmission into NEUTRAL and push the ATC in either direction until the light colored link is visible through the inspection hole.

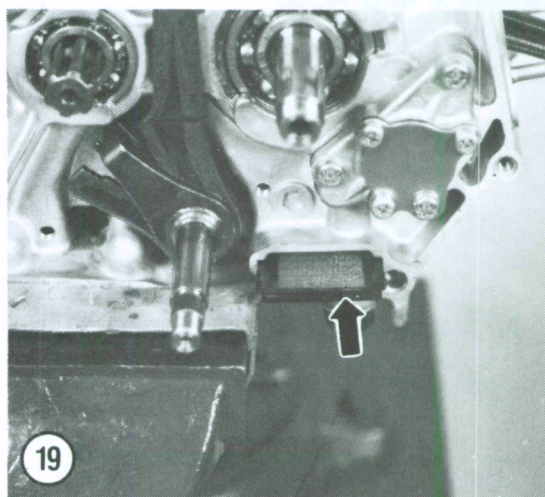
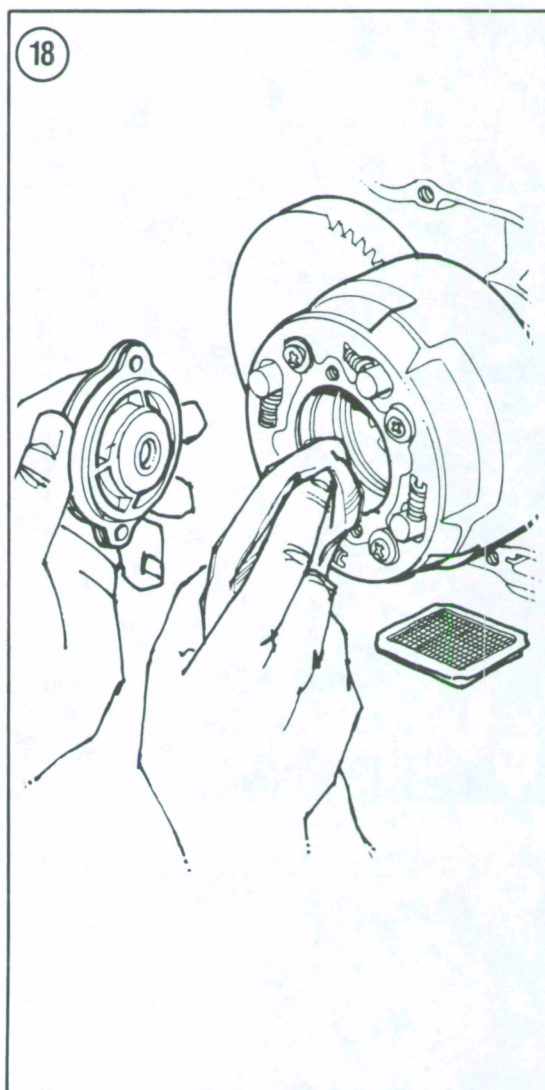
4. Starting at this point, lubricate the chain with a good grade of chain lubricant, carefully following the manufacturer's instructions. If a chain lubricant isn't available, use 10W-30 motor oil. Continue to push the ATC forward while lubricating the drive chain through the inspection hole (Figure 21). To make sure the entire chain is lubricated, start with the light-colored link and end up with the light-colored link.

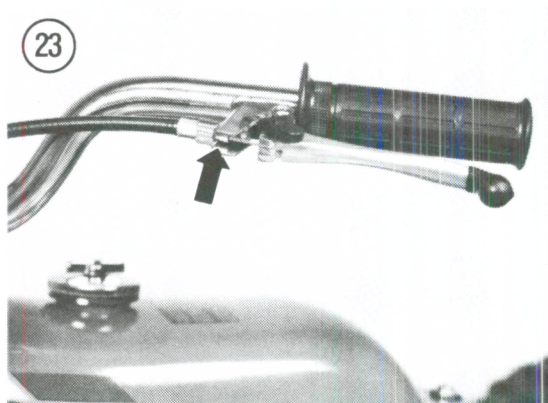
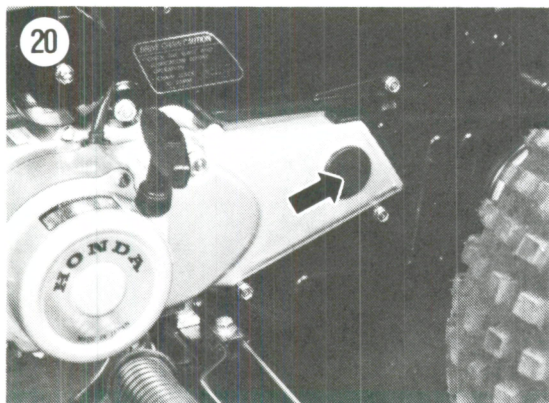
Control Cables

The control cables should be lubricated every 30 days of operation. They should be also inspected at this time for fraying and the cable sheath should be checked for chafing. The cables are relatively inexpensive and should be replaced when found to be faulty.

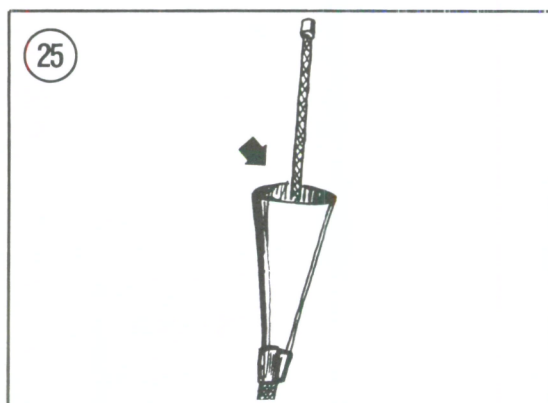
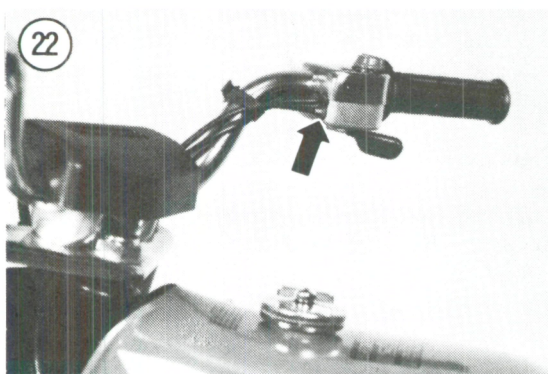
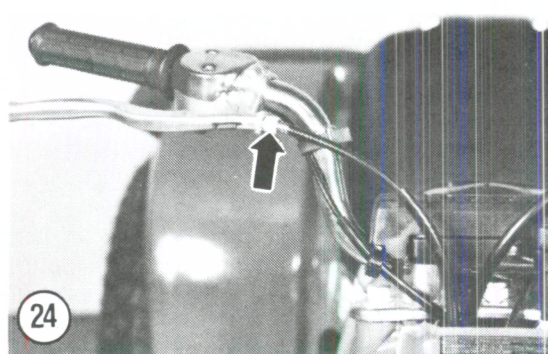
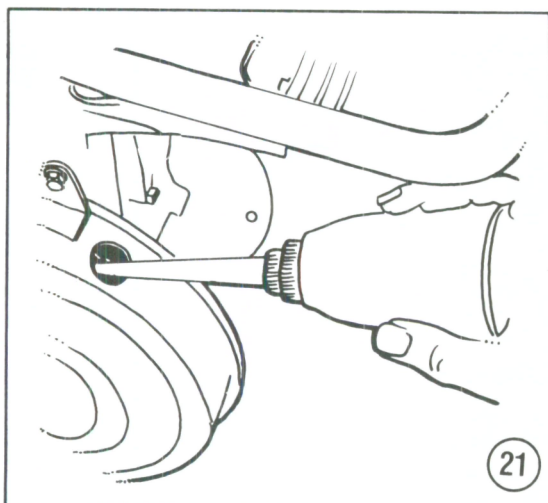
The control cables can be lubricated either with oil or with any of the popular cable lubricants and a cable lubricator. The first method requires more time and the complete lubrication of the entire cable is less certain.

Examine the exposed end of the inner cable. If it is dirty or the cable feels gritty when moved up and down in its housing, first spray it with a lubricant/solvent such as LPS-25 or WD-40. Let this solvent drain out, then proceed with the following steps.





3



Oil method

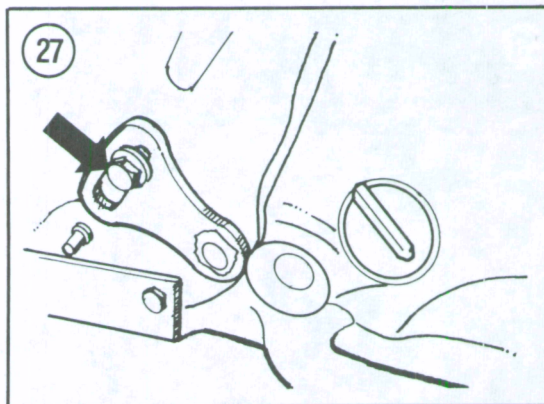
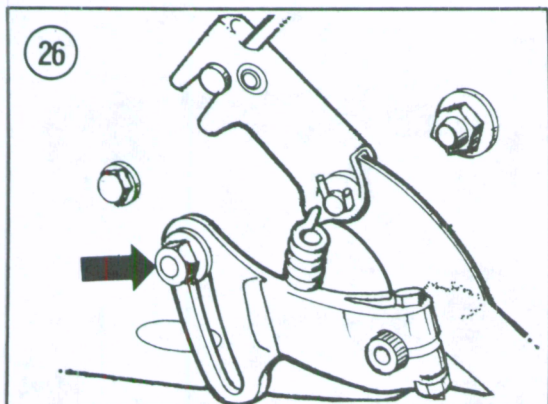
1. Disconnect the cable from the throttle lever (Figure 22), the rear brake lever (Figure 23) and, on models so equipped, the front brake lever (Figure 24).
2. Make a cone of stiff paper and tape it to the end of the cable sheath (Figure 25).

3. Hold the cable upright and pour a small amount of thin oil (SAE 10W-30) into the cone. Work the cable in and out of the sheath for several minutes to help the oil work its way down to the end of the cable.

NOTE

To avoid a mess, place a shop cloth at the end of the cable to catch the oil as it runs out.

4. Remove the cone, reconnect the cable and adjust the cable as described in this chapter.



Lubricator method

1. Disconnect the cable from the throttle lever (Figure 22), the rear brake lever (Figure 23) and, on models so equipped, the front brake lever (Figure 24).
2. Attach a lubricator following the manufacturer's instructions.
3. Insert the nozzle of the lubricant can in the lubricator, press the button on the can and hold it down until the lubricant begins to flow out of the other end of the cable.

NOTE

Place a shop cloth at the end of the cable(s) to catch all excess lubricant that will flow out.

4. Remove the lubricator, reconnect the cable and adjust the cable as described in this chapter.

Miscellaneous Lubrication Points

Lubricate the front brake lever (models so equipped), rear brake lever and rear brake pedal pivot point.

PERIODIC MAINTENANCE

Drive Chain Adjustment

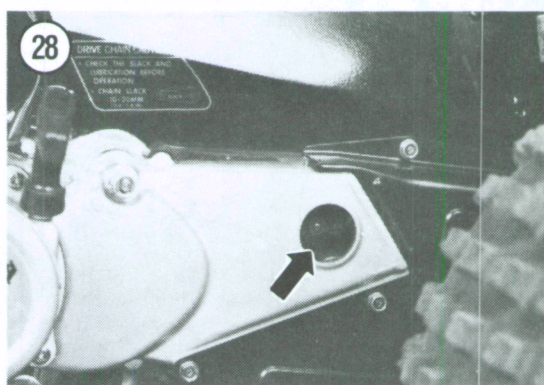
The drive chain should be checked and adjusted every 30 days of operation.

NOTE

Drive chain removal, inspection, cleaning and installation is covered in Chapter Eight.

1973-1974 ATC70; ATC90; 1979-1980 ATC110

1. Set the ATC on level ground.
2. On ATC90 and 1979-1980 ATC110 models, remove the seat/rear fender assembly.
- 3A. On 1973-1974 ATC70 models, loosen the drive chain tensioner lock bolt (Figure 26). Using your



hand, pull or push the tensioner plate and shaft upward until it will no longer move; tighten the lock bolt.

3B. On ATC90 and 1979-1980 ATC110 models, loosen the drive chain tensioner locknut (Figure 27). Using your hand, pull or push the tensioner plate and shaft upward until it will no longer move; tighten the locknut.

4. Remove the drive chain inspection hole cover (Figure 20) on the left-hand side of the drive chain case.

5. Through the inspection hole (Figure 28), push up on the drive chain and then let it fall back down. The correct amount of free play is 10-20 mm (3/8-3/4 in.); refer to Figure 29.

6. If additional adjustment is necessary, repeat Step 3.

CAUTION

On a well run-in ATC, if the drive chain becomes slack shortly after being properly adjusted, chances are the drive chain tensioner arm and shaft need replacing. The splines on the shaft and the matching teeth on the chain tensioner arm tend to flatten out after long hard use and can no longer grab

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